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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HAN-TING CHANG, DOMINIQUE CHARMOT, DAMIAN HAJDUK, MANIKANDAN JAYARAMAN, FLORENCE ROGER, VICTOR NAVA-SALGADO, and ADAM SAFIR

Appeal 2010-001213
Application 10/689,775
Technology Center 1700

Before ADRIENE LEPIANE HANLON, CATHERINE Q. TIMM, and BEVERLY A. FRANKLIN, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-9, 12-19, 22, and 23 under the non-statutory

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

doctrine of obviousness-type double patenting as obvious over claims 1-20 of Charmot '850 (US 6,395,850 B1; issued May 28, 2002), claims 8-16 and 20 of Liu (US 6,767,968 B1; issued Jul. 27, 2004), and claims 1-13 of Charmot '969 (US 6,569,969 B2; issued May 27, 2003). Appellants also appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1-9, 12-19, and 22 under 35 U.S.C. § 102(b) as anticipated by Charmot '850. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

Appellants' invention relates to a method of preparing block copolymers with at least one segment capable of adhering to a polyolefinic surface and polymeric segments with a high affinity (or miscibility) with polar polymeric binders typically used in coatings and inks (Spec. ¶ [0009]). Claims 1 and 22 are illustrative:

> 1. A method of preparing a block copolymer having at least one hydrophilic block and one olefinic block comprising polymerizing a liquid hydrophilic monomer under polymerization conditions in the presence of a dithio-containing control agent to create said at least one hydrophilic block and subsequently reacting said at least one hydrophilic block with an olefin monomer capable of free radical polymerization under polymerization conditions to form said at least one olefinic block, and modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer.
>
> 22. A method of preparing a block copolymer having at least one hydrophilic block and the structure A-R, wherein R represents a random block comprising at least two monomers, the method comprising polymerizing a hydrophilic monomer under free radical polymerization conditions in the presence of a dithio-containing control agent to create said at least one hydrophilic block and subsequently reacting said at least one hydrophilic block with at least one olefinic monomer and one

> monomer that is hydrophilic with respect to the olefinic monomer capable of free radical polymerization under polymerization conditions to form said at least one random block, and at least partially hydrogenating said random block.

II. DISCUSSION

A. ANTICIPATION

In addressing the Examiner's anticipation rejection, Appellants focus their arguments on the "modifying the surface tension . . ." limitation common to independent claims 1 and 12 (Br. 4 and 7) and the "at least partially hydrogenating . . ." limitation common to dependent claims 6 and 16 and independent claim 22 (Br. 6, 8, and 9). Thus, we decide this Appeal on the basis of representative independent claims 1 and 22 for the anticipation rejection.

1. ISSUE ON APPEAL

The issues on appeal arising from the contentions of Appellants and the Examiner are:

(1) does the evidence support the Appellants' view that the Examiner erred in finding that the block copolymer taught by Charmot '850 inherently has a surface tension within the claimed range such that the surface tension limitation of claim 1 is met? We answer this question in the affirmative.

(2) does the evidence support the Appellants' view that the Examiner erred in finding that the recited "at least partially hydrogenating . . ." limitation of claim 22 is a result or property inherent in the block copolymer taught by of Charmot '850? We answer this question in the affirmative.

2. ANALYSIS

Claim 1

The Examiner contends that the limitation reciting "modifying the surface tension of an olefinic substrate by an amount of at least 10 mN/m with the block copolymer" is a property inherently possessed by the block copolymer taught by Charmot '850 because of the substantially identical compositions disclosed in Charmot '850 and in the claimed invention (Ans. 6).

As a first matter, while there is some dispute between the Examiner and Appellants over the meaning of the "modifying surface tension …" limitation, Appellants' Specification makes clear that the ability to change the surface tension of an olefinic substrate is a feature or property of the block copolymers that are made by the recited method and not an additional step necessary to make the block copolymers (*see* Spec. ¶¶ [0012], [0015], and [0030]). Accordingly, claim 1 is anticipated by a block copolymer that is merely capable of modifying the surface tension of an olefinic substrate, as recited in the claims.

Appellants contend that, even if the claim limitation is a recited property, "[m]aking copolymers as broadly taught by the '850 patent may or may not result in copolymers that would modify the surface tension of an olefin substrate as claimed. . . .[I]t is readily apparent that the claimed limitation . . . does <u>not necessarily flow</u> from the teaching of making copolymers with a laundry list of monomers and control agents under a wide variety of reaction conditions" (Br. 6).

According to the Examiner, the list of monomers disclosed in Charmot '850 explicitly discloses the monomeric species claimed (Ans. 6-7).

In order to anticipate, a reference must identify something falling within the claimed subject matter with sufficient specificity to constitute a description thereof within the purview of § 102. *In re Schaumann*, 572 F.2d 312, 317 (CCPA 1978). "[A] prior art reference without express reference to a claim limitation may nonetheless anticipate by inherency." *In re Omeprazole Patent Litig.*, 483 F.3d 1364, 1373 (Fed. Cir. 2007).
In general, a limitation is inherent if it is the "natural result flowing from" the explicit disclosure of the prior art. *Schering Corp. v. Geneva Pharms.*, 339 F.3d 1373, 1379 (Fed. Cir. 2003). However, "[i]nherency ... may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Mehl/Biophile Int'l Corp. v. Milgraum*, 192 F.3d 1362, 1365 (Fed. Cir. 1999) (*quoting In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981)).

Charmot '850 teaches a free radical polymerization by creating a mixture of at least one polymerizable monomer and a control agent (Charmot '850, col. 5, ll. 40-44). Charmot '850 teaches a variety monomers which may be used alone or in combination and teaches that they can be polymerized sequentially or simultaneously (Charmot '850, col. 9, l. 65 to col. 10, l. 7; claim 7). While the recited list of monomers includes hydrophilic monomers and olefinic monomers that are capable of free radical polymerization, Charmot '850 fails to "describe" within the meaning of § 102 a specific genus or species of copolymer having the required surface tension property. Nor has the Examiner provided the requisite

evidence or reasoning necessary to establish that the surface tension is more than a possibility based upon the mere chance of selecting a subset of the monomers taught by the reference.

Thus, the Examiner has not shown that the prior art teaches the recited block copolymer with sufficient specificity to result in anticipation of the method of claim 1.

Claim 22

The Examiner contends that the recited step of "at least partially hydrogenating said random block" of claim 22 is a result or property that is inherent in the block copolymers taught by Charmot '850. The Examiner argues that "polymerization of olefinic monomers inherently will result [sic, in] polymers with no unsaturation (similar to a hydrogenated polymer). Therefore, the recited 'at least partially hydrogenating said random block' could only be [sic] result from the copolymerization of the hydrophilic block in the presence of an unique comonomer" (Ans. 8).

Appellants contend that the "at least partially hydrogenating . . ." step is a positive method step and that "[h]ydrogenation does not ever necessarily flow from polymerization" (Br. 9).

Appellants' Specification describes particular embodiments in which block copolymers made from diene monomers are subsequently hydrogenated to convert the polydiene block into an alpha-olefin copolymer block (*see* Spec. ¶¶ [0011] and [0017]). Such a process is also described in Examples 155-173 in which styrene and butadiene monomers were polymerized to form polystyrene-b-(polybutadiene-co-polystyrene) block copolymer (Spec. ¶¶ [0082]-[0084]). This block copolymer was then hydrogenated to remove the remaining double bonds (Spec. ¶ [0087]).

The Examiner notes that claim 22 is not limited to diolefin monomers (Ans. 8), and we recognize that some of the block copolymers encompassed by the teachings of Charmot '850 would not have any polydiene blocks that would require subsequent hydrogenation.

However, claim 22 is directed to a method including a step of at least partially hydrogenating and the Examiner has failed to demonstrate that Charmot '850 describes a step of hydrogenating block copolymers. Simply polymerizing to form a saturated polymer is not the same as hydrogenating a double bond to obtain a saturated polymer.

B. OBVIOUSNESS-TYPE DOUBLE PATENTING

1. ISSUE ON APPEAL

An issue on appeal arising from the contentions of Appellants and the Examiner is: does the evidence support the Appellants' view that the Examiner erred in concluding that the present claims are not patentably distinct from the patented claims of Charmot '850, Liu, and Charmot '969? We answer this question in the affirmative.

2. ANALYSIS

With respect to each of the obviousness-type double patenting rejections, the Examiner contends that "[a]lthough the conflicting claims are not identical, they are not patentably distinct from each other because the [claims of the patent] fully encompasses the invention of Claims 1-9, 12-19, 22, 23 of [sic, the] instant application" (Ans. 3-4).

The fact that a claimed method may be encompassed by the teachings of the prior art claims does not by itself render the method obvious. *See In re Sarett*, 327 F.2d 1005, 1014-15 (CCPA 1964) (reversing rejections for obviousness-type double patenting because patented generic claims to an

oxidizing agent was patentably distinct from appellant's specific oxidizing agent, despite the fact that the patent's supporting disclosure included appellant's specific oxidizing agent, since claims were not directed to the oxidizing species).

"[T]here must be some clear evidence to establish why the variation would have been obvious which can properly qualify as 'prior art.'" *In re Kaplan*, 789 F.2d 1574, 1580 (Fed. Cir. 1986). Only with regard to this latter question is the analysis analogous to an obviousness-type analysis under 35 U.S.C. § 103(a). S*ee Studiengesellschaft Kohle mbH v. N. Petrochemical Co.*, 784 F.2d 351, 355 (Fed.Cir.1986) (refusing to consider the issue of obviousness-type double patenting where the patent challenger "offered no evidence of the scope and content of the prior art, ... the level of skill in the art, or what would have been obvious to a person skilled in the art").

Charmot '850 and Charmot '969

With respect to Charmot '850 and Charmot '969, Appellants contend, among other things, that the references fails to teach using the specific monomers recited in the claims (*see* Br. 12 and 13). The Examiner responds that "the monomers as claimed are also not specific, and rather broad in teachings" and that "monomers are generally either hydrophilic or hydrophobic, and olefins are generally hydrophobic" (Ans. 4-5).

The claims of Charmot '850 and the claims of Charmot '969 disclose "forming a mixture of one or more monomers" but are entirely silent as to the scope of suitable monomers.

The Examiner has provided no rationale as to why it would have been obvious to one of ordinary skill in the art to select a block copolymer made

specifically of a hydrophilic monomer and an olefinic monomer or made specifically of a monomer capable of free radical polymerization.

Accordingly, the Examiner has failed to provide a proper rationale supporting a conclusion that the claims of the present invention are not patentably distinct from the claims of either Charmot '850 or the claims of Charmot '969.

Liu

Appellants contend, among other things, that Liu fails to teach the use of any dithio control agent being used to make the copolymers (Br. 12).

Liu's claims disclose a block copolymer having a "non-polymeric linking core" but are entirely silent as to the scope of suitable materials that constitute the non-polymeric linking core. Liu's claims do not particularly recite that the core is a dithio control agent.

The Examiner has provided no rationale as to why it would have been obvious to one of ordinary skill in the art, from the generic teaching of a non-polymeric linking core, to select a dithio control agent for the polymerization process. Thus, we agree with Appellants that the Examiner has failed to provide a proper rationale supporting a conclusion that the claims are not patentably distinct from those of Liu.

III. CONCLUSION

On the record before us and for the reasons discussed above, we cannot sustain the rejections maintained by the Examiner.

IV. DECISION

We reverse the Examiner's decision.

REVERSED

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